

No. 7

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A NEW HYDRACTINIA AND OTHER WEST COAST HYDROIDS

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# A New Hydractinia and other West Coast Hydroids

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## HYDRACTINIA LÆVISPINA *new species*

Plate I, figs. 1-6

*Trophosome*.—As the colonies were growing on a barnacle shell the basal coenosarc is separated into parallel masses by the ridges of the shell, with apparently little connection over the ridges. The nutritive zooids appear in successive stages of growth from the one side of the colony to the other, the largest reaching a length of 2.5 mm. Even in the largest zooids the tentacles are few in number as compared with *H. aggregata*, eight being the common number. The ridges of the barnacle shell give a certain amount of protection and this may account for the fact that there are very few basal spines and those that are present are smooth, not jagged, as in other species. They taper gradually to a rather blunt point and they are very slightly curved. They are about 0.5 mm. in length.

*Gonosome*.—Sporosacs begin to develop on the generative zooids when they are small; on these zooids there are three or four tentacles that persist although they remain of small size. A mouth is present. The sporosacs, commonly four in number, appear at about one-third of the distance from the tentacles to the base. The female sporosacs are small, with one ovum in each; the male considerably larger; both spherical.

*Other Zooids*.—Scattered about the outer portion of the colony are numerous long, slender, tentacular filaments or "tentaculozooids." They are only about one-fourth the diameter of the extended nutritive zooids and may be twice as long. They are well provided with nematocysts but have neither mouth nor tentacles.

*Colour*.—General colour light pink; the spadix of the male sporosac and the basal portion of the female sporosac are of a much darker pink and in many of the female generative zooids there is a patch of similar shade just below the base of the tentacles.

*Distribution*.—On barnacles in 7 to 10 fathoms, at the western end of Gabriola Pass.

Two fine colonies of this species were discovered by Dr. C. H. O'Donoghue, in looking over the shells of the barnacle, *Balanus aquilla*, for polyzoa, one on the outside of the main shell or parapet and the other on the surface of the scuta. Fortunately the one was a male colony and the other a female and as both were in good condition they gave all the data necessary. They were obtained June 29, 1921.

## EUDENDRIUM IRREGULARE *new species*

Plate I, fig. 7

*Trophosome*.—Stolons irregular, straggling over such other hydroids as *Lafaa gracillima*, not forming a regular network but, in places, adhering to form

a loose fascicle. There are no definite stems as there are in most of the species of this genus. Most commonly the pedicels grow singly from the stolon; they are more or less sinuous and they vary greatly in length, the longest about 4 mm. Probably because the stolons grow over more or less erect hydroids, these pedicels pass out from the stolon in all directions and at various angles. Neither the stolons nor the pedicels are annulated, although the perisarc may be slightly and irregularly wrinkled. Hydranths with few tentacles, 8 to 10.

*Gonmosoe*.—There were no gonophores present in any of the colonies examined.

*Colour*.—Perisarc, light horn colour; hydranths, gray.

*Distribution*.—Northumberland channel, 15 fathoms.

Colonies of this species have been dredged on numerous occasions and in different localities, but the hydranths disintegrate so soon after the colony is dislodged that it has never been possible until now to get anything to examine but the stolons and the perisarc stumps. Even in this instance, the cœnosarc structures had disappeared in many cases, but there were several well preserved hydranths, enough to serve for diagnosis when taken in connection with the unusual habitus of the colony. Now that this much has been observed it may be possible later to get specimens with gonophores. There were none present on these colonies, collected July 14.

#### CAMPANULINA FORSKALEA (Peron et Lesueur)

Plate II, fig. 8

In a paper "On the development of *Aequorea forskalea*"<sup>1</sup> the development of this medusa was traced from the stage in which four complete perradial canals and four partial interradians were developed, and attention was called to the likelihood that a hydroid found in the vicinity, of the genus *Campanulina*, was the hydroid belonging to the species, although no convincing evidence was available at that time.

Shortly after the paper was written, on May 17 of that year, 1916, a fine hydroid colony was obtained on a Pinnixid from the mantle cavity of a specimen of *Mya arenaria*, obtained at Taylor Bay, Gabriola Island, and with it a partially developed medusa-bud. On May 22, another colony was found on a Pinnixid from a *Mya* obtained at Snake Island and this time there was a fully developed medusa-bud with the medusa nearly ready to escape. This showed unmistakable similarity to the very young medusa of *Aequorea forskalea* obtainable in the sea in the spring. It has been stated that the hydroid is very small as compared with the large size of the medusa and the lack of proportion is plainly evident even when the medusa is only a bud, as it towers above the little zooid which gives it support and is of so much greater diameter that it puts the whole colony out of balance.

The pedicel of the gonosome is attached to the pedicel of the nutritive zooid just below the hydrotheca. The total length of the pedicel and bud is 1.25 mm. while the length of the nutritive zooid is but 0.9 mm. Its greatest diameter is 0.4 mm., more than twice as great as the diameter of the hydrotheca.

The pedicel has one shallow annulation near the base; it increases in dia-

<sup>1</sup>Trans. Roy. Soc. Can., Ser. III, Vol. X, Sec. IV, 1916, pp. 97-104.

meter distally until it passes into the gonangium without any definite constriction. There is only one medusa-bud developed in the gonangium; its height from the base of the tentacles is approximately the same as its greatest width. Four radial canals and four tentacle bulbs, each giving rise to a tentacle, are already present.

# PLUMULARIA LAGENIFERA Allman

Plate II, fig. 9

Colonies of this species are not uncommon in the Vancouver Island region but during the past summer one was picked up by the plankton net, with some unusual features that are interesting because they are similar to those observed in an entirely different species, *Obelia geniculata*, collected under somewhat similar conditions off the coast of Massachusetts.<sup>1</sup>

Normally the colonies are very regular, the hydrocladia are simple and regularly alternate; the internodes are definitely arranged and the nematophores are definitely placed.<sup>2</sup> In this colony the main internodes vary in length and while some of them have the single nematophore besides the two in the axil, several have two; in one instance two hydrocladia come off in succession from the same side instead of regularly alternating. In the hydrocladia there is much greater variation. In all cases there is a short non-hydrothecate internode followed by a longer hydrothecate internode as in the normal colonies, but there the similarity ceases in every hydrocladium but the basal one on the one side, in which the second pair of internodes is also normal. Elsewhere, the remaining internodes with the exception of the terminal one, more nearly resemble the stem internodes except that they are longer and more slender, each with from 1 to 3 nematophores besides those in the axil, and each giving off a secondary hydrocladium. The arrangement is very irregular, however, as there may be two or three given off in succession on the same side. The terminal internode is of the frustule type, such as is often found late in the season in such forms as *Obelia longissima*, *Campanularia angulata*, etc., a condition supposed by Kramp and others to be due to a lack of nourishment. On this internode there are one or two nematophores. The secondary hydrocladia have the two internodes at the base similarly to those of the primary hydrocladia, with a terminal internode similar to the primary terminal, with or without an intermediate internode.

The colony was obtained at or near the surface near Berry point, which is the northeast point of Gabriola Island, in an area where much of the time there are cross currents and eddies. In all probability these would bring a supply of food to the hydroids, but there may not have been enough for normal development of the colony which, in any case, was fully alive when the collection was made, with the hydranths in good condition.

The relative scarcity of the hydranths, the attenuation and irregularity of growth of the hydrocladia and the formation of terminal frustules or tendrils, may be an indication of starvation. These were the abnormal characteristics of the specimens of *Obelia geniculata*, found floating off the Massachusetts

<sup>1</sup>Bull. Mus. Comp. Zool. Harvard, Vol. LIX, No. 4, 1915, pp. 311-314.

<sup>2</sup>Hydroids of the Vancouver island region, 1914, p. 207.

coast, to which reference has been made above. In *Obelia* the gonangia were irregularly arranged as well but there were no gonangia on the Plumularian colony.

#### HYDRA VIRIDIS Linn

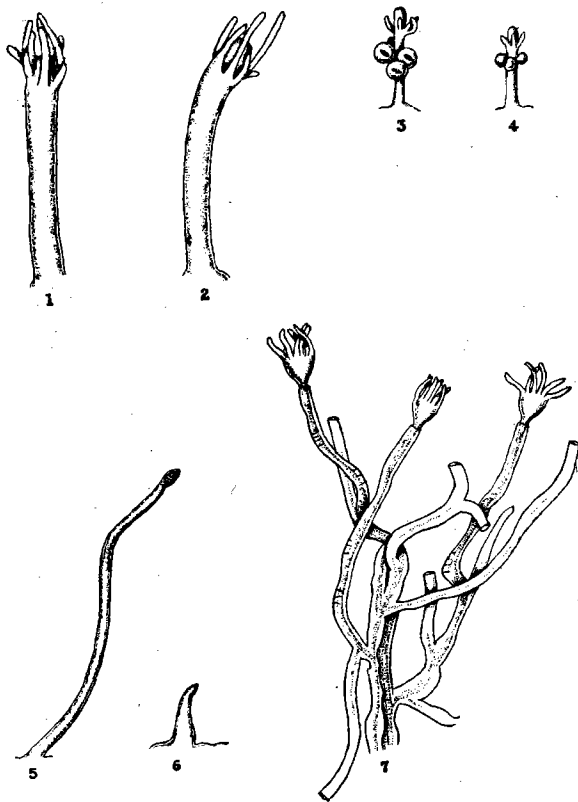
Although it is quite probable that *Hydra* is to be found throughout the province of British Columbia there does not seem to be any record of its occurrence. On May 25, 1919, some fine specimens of *Hydra viridis* were obtained in a small pool near the top of the hill immediately southwest of Hammond Bay and about a mile from the Biological station. Since that time others have been found in the same pool and in pools at other points in the vicinity of the station.

#### HYDRA VULGARIS Pallas?

While looking over some material collected from a stream about half a mile from the Biological station on September 8, 1921, Mrs. C. H. O'Donoghue observed a gray *Hydra*. Other material from the same locality was examined but no other specimens were obtained. It was smaller than the usual size of *Hydra vulgaris* and had only six tentacles. There was no indication of a spermary or ovary.

On account of this immaturity it is not possible to be sure of the identity of the species but it probably belongs to the gray type of *Hydra vulgaris*. In any case it seems better to place it here until the examination of mature specimens makes it possible to settle the question.

PLATE I.



Figs. 1-6. *Hydractinia laevispina*.

1, 2. Nutritive zooids.

3. Generative zooid, male.

4. Generative zooid, female.

5. Tentaculozooid.

6. Spine.

Fig. 7. *Eudendrium irregulare*.

Portion of colony showing irregular habitus.

Magnification in each case 12 diameters.

Drawings by Clara A. Fraser.





PLATE II.

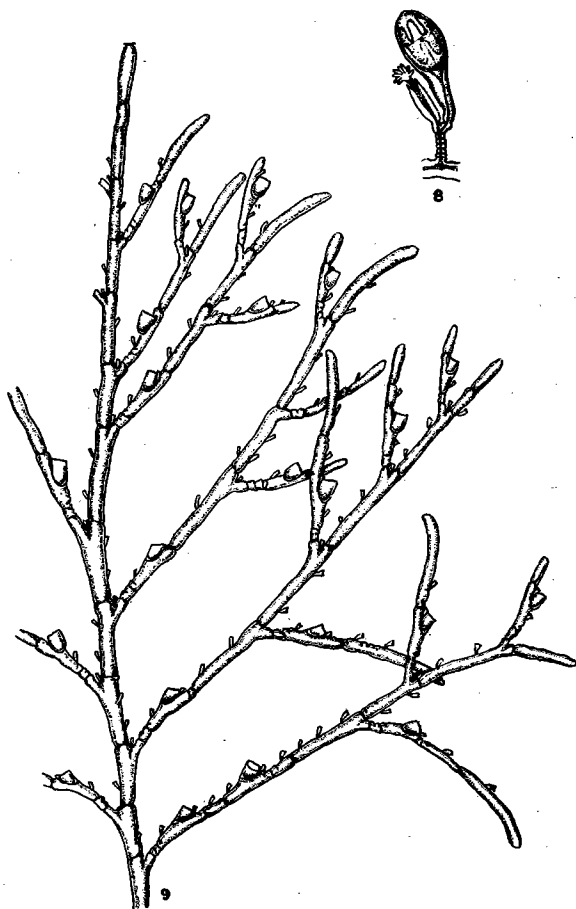


Fig. 8. *Campanulina forskalea*.

Colony showing medusa bud.

Fig. 9. *Plumularia lagenifera*.

Portion of colony showing unusual growth features.

Magnification in each case 12 diameters.

Drawings by Clara A. Fraser.